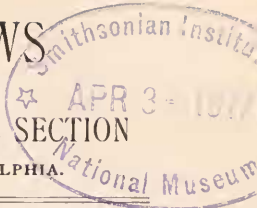


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Key to the North American Species of the Tricolor Group of the Dipterous Genus *Tipula* Linnaeus,

With Descriptions of Four New Species.

By W. G. DIETZ, M.D., Hazleton, Pennsylvania.

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¹Can. Ent. Vol. XLVIII, p. 49.

²Ibid. p. 50, placed here tentatively.

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***Tipula alexandriana* spec. n.** (Pl. XI, fig. 1, 1A and 1B).

Joints of antennal flagellum with the exception of the first, unicolorous, dark brown. Median vitta of praescutal mesonotum, divided by a pale stripe. Wings without fuscous costal stripe. The hyaline vitta does not extend beyond the extreme base of cell 1M².

♂.—Length 13-14 mm.; wing 16 mm.

Head grayish-white, middle of front fuscous, occiput suffused with fuscous. Joints 1-3 of palpi yellowish-fuscous, 4 dark fuscous. Frontal prolongation rather short, yellow, with a whitish bloom, and, like the nasus, beset with short blackish hairs. Antennae robust; extended backward they reach to the base of the abdomen; scapal joints and basal half of first flagellar joint, yellowish, the rest of the flagellum black, segments with well-marked basal and sub-apical enlargement, basal setae of moderate length.

Thorax. Pronotal scutum yellowish-fuscous. Mesonotal praescutum a sordid, pale yellow, stripes black, conspicuous, the median stripe narrowed posteriorly and divided by a moderately wide stripe of the ground color; lateral stripes abbreviated, parasutural foveae and antero-lateral margin of mesonotum black. Pronotal scutellum and pleuro-dorsal membrane yellowish. Pleura black, overlaid with a heavy whitish bloom, which almost completely conceals the ground color.

Scutum grayish-fuscous, darker in middle portion. Scutellum yellowish-fuscous. Postnotum grayish-fuscous, lateral margins pale. Halteres pale, knob fuscous.

Legs slender, coxae gray and beset with soft pale hairs; trochanters and basal part of femur yellow, remainder of femur yellowish-fuscous, dark fuscous at tip, tibiae and tarsi dark fuscous.

Wings grayish-fuscous, darker apically, yellowish at the base and along cell C and cell Sc, no fuscous costal stripe; stigma dark brown, preceded by a conspicuous hyaline spot; the vitta occupying cell M is but a shade paler than the ground color, not conspicuous, and does not extend beyond the extreme base of cell 1st M²; vein Cu and its basal deflection conspicuously margined with fuscous.

Abdomen deep yellow, paler beneath with a conspicuous black stripe each side, the latter does not extend beyond the sixth segment; the seventh segment entirely yellow, the extreme posterior margin of segments 1-6 a trifle paler; 8 and hypopygium brown, appendages yellowish; eighth sternite simple, not emarginate; ninth tergite short, posterior margin feebly emarginate each side; ninth sternite with rounded emargination, from the lateral margin of which arises a pencil of bristle-like, yellowish hair, and a carina-like process at the base of the median suture; upper appendages broad, leaflike, inflexed, the lower appendages form an ascending irregular lobe.

♀.—Length 12 mm.; wing 19 mm. Aside from its larger size the female differs from the male by the much shorter antennae, which scarcely reach the middle of the mesonotum, first flagellar joint yellowish-red, flagellar joints cylindrical with slight basal enlargement. Ovipositor brown at base, blades yellow, upper valves very long, almost linear, the lower valves more than one-half the length of the upper valves.

Holotype, ♂. Foothills of Mt. Shasta, California, May 20th, 1914 (A. Kutsche).

Allotype, ♀, May 26th, 1914, topotypic.

Paratype, ♂, Sonoma County, California, April 18th, 1914 (A. Kutsche). All in the author's collection.

Readily distinguished from the other members of this group with unicolorous antennal flagellum; from *fulvolincata* Doane by only the three basal joints of the antennae yellow¹ and the veins in apical part of wing not margined with fuscous.

¹ A male specimen in my collection from Los Cerritos, California, and received from Mr. M. C. Van Duzee, I unhesitatingly refer to this species, although only three basal joints of the antennae are yellow. The type of the species is a female.

From *aspidoptera* Alexander and *vicina* sp. n., by the pale median mesonotal line.

Two specimens, males, in my collection from La Junta, Colorado (E. J. Oslar), I refer to this species, though apparently differing. The head and thorax are dark brown, the mesonotal stripes black. This difference in color is due to the process of preservation. The abdominal stripes extend upon the seventh tergite.

Respectfully dedicated to Mr. Charles P. Alexander.

Tipula vicina spec. n. (Pl. XI, figs. 2, 2A, 2B.)

Grayish-brown. Antennal flagellum brown. Mesonotal stripes margined with fuscous, the median stripe divided by a blackish line. The hyaline vitta of the wing extends through cell 1st M² and cell R⁵ to the apex.

♂.—Length 11.5 mm., wing 13 mm. *Head*—Grayish-brown, paler along the upper orbital margin, with dark median occipital line. Rostrum sordid yellow, nasus beset with whitish hairs. Palpi fuscous, the last joint shorter than the preceding joints together. Antennae slender; bent back, they reach to base of halteres; scapal and first flagellar joints yellowish-brown, the following joints fuscous, basal enlargement feeble, black, the setae shorter than the segments.

Thorax—Mesonotum grayish-fuscous with a yellowish sheen, the praescutal stripes scarcely darker than the ground color and margined with fuscous, the median stripe divided by a black median line; pronotal scutum brownish; scutellum and postnotum yellowish-brown. Pleurodorsal membrane sordid yellowish. Pleura gray with a whitish bloom. Halteres yellow at base, darker towards the club, the latter fuscous.

Legs yellow with whitish bloom; femora darker towards and infuscate at the apex; tibiae yellowish-fuscous, their apices and the tarsi fuscous.

Wings grayish-fuscous; the fuscous costal border includes the basal portion of cell R and all the radial cells except R⁵; a small hyaline spot before the stigma, the latter dark brown; the hyaline vitta of cell M and outer part of cell R extends through cell 1st M² and cell R⁵ to the apex; a conspicuous hyaline spot at apex of cell R and base of cell 1st M²; vein Cu and its basal deflection margined with fuscous.

Abdomen above pale yellowish-gray, a broad, pale fuscous stripe each side, a black transverse line each side, behind the anterior margin of segments 2-5, lateral margins of segments broadly, the posterior margin very narrowly, paler, the former with a small brown dot on tergites 2-7; venter gray, yellowish towards the base. Eighth sternite

simple. Hypopygium yellowish-brown; the ninth tergite a little longer than wide and produced mesially into a short, obtuse lobe, the ninth sternite deeply divided, the postero-inferior angle produced; appendages yellowish-brown, the upper broad, irregular, the lower presents an oval, outward bent lobe.

♀.—Length 15.5 mm.; wing 14.5 mm. Antennae short, first joint grayish-brown, joints 2-4 reddish-brown, the remaining segments dark brown, scarcely darker at base. The dark dots on the pale lateral margins of the abdominal tergites less distinct. Ovipositor yellowish-brown, upper valves long and slender, lower valves about two-thirds the length of the upper, blade-shaped.

Holotype, ♂, Floodwood, Schoolcraft County, Michigan, July, 1915 (J. S. Rodger).

Allotype, ♀, topotypic.

Paratypes, one ♂ topotypic, one ♂ Lancaster, New York, May 31st, 1908 (M. C. Van Duzee). All in the author's collection.

Apparently close to *T. aspidoptera* Alexander, from which it is readily distinguished by the narrow median mesonotal line and all R⁵ entirely hyaline.

Tipula conspicua spec. n. (Plate XI, fig. 3, 3A, 3B).

Joints of antennal flagellum distinctly bicolored. Thoracic stripes margined with fuscous, the median stripe divided by a dark mesial line. The hyaline alar vitta reaches to the apex. Abdomen yellow without stripes.

♂.—Length 15.5 mm.; wing 17 mm. *Head* grayish-fuscous, a tuberosity behind the antennal insertion; face and frontal prolongation cream-yellow, nasus beset with short black hairs; sides of rostrum brownish. Palpi yellowish-brown, joints 1-3 pale at tip, the last joint shorter than the preceding joints together. Antennae slender; bent back, they reach to the base of the postnotum; scapal joints brownish with a whitish bloom above; flagellar joints slender, sub-cylindrical with a whorl of black setae, the latter shorter than the respective segments, yellow and, with the exception of the first joint, black at the base, with a whitish bloom.

Thorax—Pronotal scutum gray with a crescentic, fuscous line. Praescutum grayish-white, stripes light-brown, margined with dark brown, the median stripe of equal width throughout and divided by a dark median line. Scutum brown, central part whitish. Scutellum sordid white, a trifle darker anteriorly. Postnotum sordid white, posterior margin darker, surface transversely rugulose, a brownish spot each side. Halteres yellowish-fuscous, paler towards the base, knob brown. Pleura and pleuro-dorsal membrane grayish-white.

Legs slender, yellowish-fuscous; femora and tibiae infuscate towards the tips; tarsi fuscous.

Wings grayish-fuscous, costal border, including cell R almost entirely and cells R² and R³ dark fuscous, vein Cu narrowly, vein Cu¹ more broadly margined with fuscous; the hyaline vitta begins at the basal third of cell M and extends through cell 1st M² and the bases of cells M² and M³, and cell M¹ almost entirely to the apex; the dorsal border of cell R⁵ is hyaline in its entire length and forms an integral part of the vitta; a conspicuous hyaline antestigmal spot extends to the apex of cell R; basal third of cell M infuscate, bases of cell Cu and cell 1 A hyaline.

Abdomen ochre-yellow without longitudinal stripes and rather faint, pale fuscous striae each side behind the anterior margin of tergites 2-4; tergites 5-8 somewhat infuscate, the eighth sternite simple. Hypopygium yellowish-brown, ninth tergite longer than wide, posterior margin incised each side, the median part somewhat compressed and produced in the form of a cone; from within the lateral incision arises a small inconspicuous pencil of stiff hairs; ninth sternite long, deeply and narrowly divided; upper appendages large, blade-like, incurved; the middle appendages flattened with an acute lance-shaped process, directed dorsad; the lower appendages irregular, ascending, and each ends in two small lobes.

Holotype, ♂, Black Mountains, North Carolina, September, 1913 (W. Beutenmueller). In the author's collection.

Closely resembles *Tipula cluta* Loew, but differs in cells M¹ and M², being partially hyaline and the costal half of cell R⁵ fuscous. The hypopygium is different in construction.

***Tipula xanthostigma* spec. n.** (Pl. XI, fig. 4).

Yellowish-brown. Segments of antennal flagellum yellow, black at base. Thoracic stripes margined. The alar vitta extends into cell 1st M² but does not reach the apex; stigma yellow.

♀.—Length 19 mm.; wing 17 mm. *Head* grayish-yellow with dark occipital line, face yellowish, frontal prolongation yellow, nasus beset with blackish hairs toward the apex; rostrum light brown on the sides. Palpi light brown, darker towards the apex. Antennae short, scapal joints brownish, joints of flagellum yellow, black at base.

Thorax.—Pronotal scutum pale brown, a fuscous line each side. Praescutum yellowish-gray, stripes broad, light coffee-brown and almost entirely concealing the ground color and very narrowly margined with darker brown; the median stripe narrowed posteriorly and divided by a blackish line. Scutum pale coffee-brown, margins paler. Scutellum and postnotum yellow, posterior margin of the latter brownish. Pleurodorsal membrane grayish-yellow. Pleura and coxae yellowish with a white bloom. Halteres pale, knob fuscous.

Legs—Trochanters and femora yellowish, the latter infusate towards the apex, tibiae and tarsi yellowish-fuscous, darker towards the apices.

Wings light grayish-fuscous, costal border brown; stigma sordid yellow; basal half of vein Cu narrowly, remainder and the basal deflection more widely, margined with fuscous; a dark-brown spot at the bases of cells R⁴ and R⁵; the hyaline vitta begins near the base of cell M and extends into the base of cell 1st M², the cells bordering the latter, pale, narrowly margined with hyaline; the very conspicuous antestigmal hyaline spot extends into the base of cell 1st M².

Abdomen sordid yellow, a broad fuscous stripe each side extends from the base to the eighth tergite, the two stripes leave but a narrow vitta of the ground color between them. Ovipositor ferruginous, upper valves strongly narrowed towards the apex, lower valves a little wider and about three-fifths the length of the upper valves.

Holotype, ♀, Chinney Gulch, Colorado, June 9th, 1914. (E. J. Osler). In the author's collection.

Readily distinguished from the other species of the group with bicolored, flagellar joints and the alar vitta not attaining the apex, by the yellowish stigma.

EXPLANATION OF PLATE XI.

- 1.—Wing of *Tip. alexandriana* spec. n.
- 1 A.—Lateral aspect of hypopygium of same.
- 1 B.—Ventral aspect of hypopygium of same.
- 2.—Wing of *Tip. vicina* spec. n.
- 2 A.—Lateral aspect of hypopygium of same.
- 2 B.—Ventral aspect of hypopygium of same.
- 3.—Wing of *Tip. conspicua* spec. n.
- 3 A.—Dorsal aspect of hypopygium of same.
- 3 B.—Lateral aspect of hypopygium of same.
- 4.—Wing of *Tip. xanthostigma* sp. n.

Egg-masses of the Vaporers Moths Wanted (Lep.).

I am venturing to appeal for help in connection with some studies in heredity I am making. I am studying the inheritance of the hair pencils in the larvae of the Vaporers Moths and am very anxious to get egg masses of the Vaporers Moths, *Orgyia (Notolophus) vetusta* and *O. badia* found on the Pacific coast and also of any other *Orgyia* found in the West. Furthermore, I want to study the gametogenesis, especially the spermatogenesis, of these species and also the behavior of the mitochondria.

In return I shall be pleased to do all I can and I can assist in practically every group of animals or plants.—J. W. H. HARRISON, 181 Abingdon Road, Middlesbro', England.